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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/742,115	12/22/2000	Atsushi Terahara	2185-0497P	7905

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EXAMINER

MERCADO, JULIAN A

ART UNIT	PAPER NUMBER
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1745

DATE MAILED: 03/21/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/742,115

Applicant(s)

TERAHARA ET AL.

Examiner

Julian A. Mercado

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 15 January 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) 5-9, 11 and 12 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-4, 10 and 13 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 6. 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Remarks***

This Office Action is responsive to applicant's election/response filed January 15, 2003.

### ***Election/Restrictions***

Applicant's election with traverse of invention I claims 1-10 and 13 and further election of species I, claims 3 and 4 in Paper No. 10 is acknowledged. Claims 5-9, 11 and 12 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected invention, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in Paper No. 10.

However, because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)). The requirement is deemed proper and is therefore made FINAL.

### ***Priority***

Acknowledgment is made of applicant's claim for foreign priority under 35 U.S.C. 119(a)-(d). The certified copies have been filed in the present application.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

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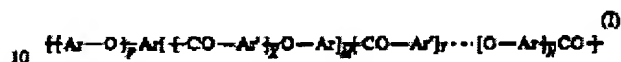
A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-4 and 13 are rejected under 35 U.S.C. 102(b) as being anticipated by Helmer-Metzmann et al. (U.S. Pat. 5,741,408).

Helmer-Metzmann teaches a polymer electrolyte for use in a fuel cell having aromatic rings comprising one or more blocks having sulfonic acid groups and one or more blocks comprising substantially no sulfonic acid groups, insofar as the sulfonation is carried out until the “desired degree of sulfonation has been reached” and with Tables 1-3 showing that the degree of sulfonation ranges from 21% to 91%. (see also col. 2 line 35-41, applies to claims 1, 2, 14)

As to the claimed general formula [1], Helmer-Metzmann teaches blocks of “[Ar-O]” as shown by the patentee’s own formula (I):



wherein corresponding to applicant’s claimed formula, oxygen or element O reads on the claimed “X represents –O-“. (claims 3 and 4) As to the claimed (R<sup>1</sup>)<sub>a</sub>, Helmer-Metzmann teaches this limitation to the extent that the instant “a is an integer from 0 to 3”, thus “a” having a zero value, i.e. absent from the structure is understood to read on the scope of the claim.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are

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such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 10 is rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Helmer-Metzmann et al. as applied to claims 1-4 and 13 above.

The teachings of Helmer-Metzmann are discussed above.

As to 60-95% by weight of whole block copolymer having substantially no sulfonic acid groups, as the block copolymer in Helmer-Metzmann is identical to that disclosed and claimed by applicant for the reasons discussed under the 35 U.S.C. 102(b) rejection above along with the patentee's teaching of obtaining a desired degree of sulfonation ranging from 21% to 91% (presumably by weight), it would naturally flow to inherently have the same weight-percentage range of non-sulfonation as claimed, absent of a showing by applicant that the claimed invention distinguishes over the reference. *In re Best*, 195 USPQ at 433, footnote 4 (CCPA 1977) and *In re Spada*, 15 USPQ 2d 1655 (Fed. Cir. 1990) Additionally, while the range of non-sulfonation in Helmer-Metzmann may arguably be interpreted to range from 9% to 79% which would overlap with applicant's claimed range, absent of unexpected results it is asserted that the weight-percent of sulfonation (or lack thereof) is an optimizable parameters for a result-effective variable. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980) The degree of sulfonation is considered result-effective for reasons such as enhancing polymeric properties such as its degree of crosslinking, swelling, and long-term chemical stability.

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***Conclusion***


The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. U.S. Pat. 5,977,241 to Koloski et al. and U.S. Pat. 5,424,151 to Koksang et al. are cited to teach polyphenylene monomers as part of the SPE in a fuel cell. U.S. Pat. 5,403,675 to Ogata et al. is cited to teach sulfonated polyphenylene monomers for the same.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Julian A. Mercado whose telephone number is (703) 305-0511. The examiner can normally be reached on Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick J. Ryan, can be reached on (703) 308-2383. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9310 for regular communications and (703) 872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

  
jam  
March 13, 2003

  
STEPHEN KALAFUT  
PRIMARY EXAMINER  
GROUP 1700